

### Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1-3. (Cancelled)
4. (Currently Amended) The display of claim ~~[[3]]~~ 12 wherein each of the light-emitting elements of the light source corresponds to eight or more corresponding controllable elements of the spatial light modulator.
5. (Original) The display of claim 4 wherein each light-emitting element of the light source corresponds to 145 or fewer corresponding controllable elements of the spatial light modulator.
6. (Currently Amended) The display of claim ~~[[3]]~~ 12 comprising a diffuser located intermediate the light source and the spatial light modulator.
7. (Currently Amended) ~~The display of claim 3 comprising~~ A display comprising:  
a light source comprising a two-dimensional array of light-emitting elements each having a controllable light output; and  
a spatial light modulator comprising a plurality of controllable elements located to modulate light from the light source;  
wherein:  
the spatial light modulator has more controllable elements than the light source has light-emitting elements;  
each of the light-emitting elements of the light source is located to illuminate a plurality of corresponding controllable elements of the spatial light modulator; and  
the display comprises a grid of reflective walled channels located intermediate the light source and the spatial light modulator.
8. (Original) The display of claim 7 wherein the reflective walled channels are hexagonal and arranged in a honeycomb structure.
9. (Previously Presented) The display of claim 7 wherein each of the light-emitting elements emits light into one of the reflective-walled channels.

10. (Previously Presented) The display of claim 7 wherein each of the controllable elements of the spatial light modulator is illuminated by light from only one of the reflective-walled channels.
11. (Currently Amended) The display of claim ~~[[3]]~~ 12 comprising a diffuser located between the spatial light modulator and a viewing position.
12. (Currently Amended) ~~The display of claim 3 wherein,~~ A display comprising:  
    a light source comprising a two-dimensional array of light-emitting elements each having a controllable light output; and,  
    a spatial light modulator comprising a plurality of controllable elements located to modulate light from the light source;  
    wherein:  
    the spatial light modulator has more controllable elements than the light source has light-emitting elements;  
    each of the light-emitting elements of the light source is located to illuminate a plurality of corresponding controllable elements of the spatial light modulator; and  
    at the spatial light modulator, a distribution of light incident from each of a plurality of the light-emitting elements of the light source comprises a convolution of a rectangular distribution and a spread function wherein the spread function has a full width at half maximum in the range of  $0.3 \times d_2$  to  $3 \times d_2$ , where  $d_2$  is a center-to-center spacing on the spatial light modulator of distributions of light modulated by adjacent light-emitting elements of the light source.
13. (Currently Amended) ~~The display of claim 3 wherein~~ A display comprising:  
    a light source comprising a two-dimensional array of light-emitting elements each having a controllable light output; and,  
    a spatial light modulator comprising a plurality of controllable elements located to modulate light from the light source;  
    wherein:  
    the spatial light modulator has more controllable elements than the light source has light-emitting elements;  
    each of the light-emitting elements of the light source is located to illuminate a plurality of corresponding controllable elements of the spatial light modulator; and,

the light-emitting elements of the light source each have a number  $N$  of discrete selectable brightness levels, and the controllable elements of the spatial light modulator have a number  $M$  of discrete selectable brightness levels and  $N < M$ .

14. (Currently Amended) ~~The display of claim 3 wherein~~ A display comprising:  
a light source comprising a two-dimensional array of light-emitting elements each having a controllable light output; and,  
a spatial light modulator comprising a plurality of controllable elements located to modulate light from the light source;  
wherein:  
the spatial light modulator has more controllable elements than the light source has light-emitting elements;  
each of the light-emitting elements of the light source is located to illuminate a plurality of corresponding controllable elements of the spatial light modulator; and,  
the light-emitting elements of the light source each have a number  $N$  of discrete selectable brightness levels, and the controllable elements of the spatial light modulator have a number  $M$  of discrete selectable brightness levels and  $N > M$ .

15-20. (Cancelled)

21. (Currently Amended) The display of claim ~~[[3]]~~ 12 wherein, a ratio of luminance of a first point, for which a corresponding light-emitting element is at a maximum light output and a corresponding element of the spatial light modulator is set to provide maximum illumination, and a second point, for which the corresponding light-emitting element is at minimum light output and the corresponding element of the spatial light modulator is set to provide minimum illumination, exceeds 1000:1.
22. (Currently Amended) The display of claim ~~[[3]]~~ 12 wherein, a ratio of luminance of a first point, for which a corresponding light-emitting element is at a maximum light output and a corresponding element of the spatial light modulator is set to provide maximum illumination, and a second point, for which the corresponding light-emitting element is at minimum light output and the corresponding element of the spatial light modulator is set to provide minimum illumination, exceeds 1500:1.

23. (Currently Amended) The display of claim ~~[[3]]~~ 12 wherein each of the light-emitting elements comprises a solid state light emitting element.
24. (Original) The display of claim 23 wherein the solid state light emitting elements comprise light emitting diodes.
25. (Currently Amended) ~~The display of claim 24 wherein~~ A display comprising:  
a light source comprising a two-dimensional array of light-emitting elements each having a controllable light output;  
a spatial light modulator comprising a plurality of controllable elements located to modulate light from the light source;  
wherein:  
the spatial light modulator has more controllable elements than the light source has light-emitting elements;  
each of the light-emitting elements of the light source is located to illuminate a plurality of corresponding controllable elements of the spatial light modulator;  
each of the light-emitting elements comprises a solid state light emitting element;  
the solid state light emitting elements comprise light emitting diodes; and,  
the light emitting diodes emit white light.
26. (Original) The display of claim 23 wherein a color of light emitted by the solid state light emitting elements is controllable.
27. (Cancelled)
28. (Currently Amended) The display of claim ~~[[27]]~~ 12 wherein the ~~variable transmissivity display~~ controllable elements of the spatial light modulator comprise liquid crystal display elements.
29. (Currently Amended) The display of claim ~~[[3]]~~ 25 wherein the spatial light modulator comprises a color spatial light modulator.
30. (Original) The display of claim 29 wherein each controllable element of the spatial light modulator comprises a plurality of color sub pixels.

31. (Currently Amended) The display of claim ~~[[3]]~~ 25 comprising a controller connected to deliver image data to both the light source and the spatial light modulator.
32. (Original) The display of claim 31 wherein the controller is configured to periodically refresh the controllable elements and to dim or turn off the corresponding light emitting element while a controllable element is being refreshed.
33. (Previously Presented) The display of claim 31 comprising a light detector coupled to receive stray light from at least one of the light-emitting elements and to generate a stray light intensity signal indicative of an intensity of the stray light wherein the controller is configured to: receive the stray light intensity signal; determine a current correction for the at least one of the light-emitting elements based at least in part on the intensity of the stray light from the at least one of the light-emitting elements and a reference value; and, use the current correction in controlling the at least one of the light-emitting elements.
34. (Previously Presented) The display of claim 31 wherein upon determining that a defective one of the light-emitting elements is not operating, the controller is configured to increase intensities of other light-emitting elements adjacent to the defective one of the light-emitting elements.
35. (Previously Presented) The display of claim 31 wherein upon determining that a defective one of the light-emitting elements is not operating, the controller is configured to increase a transmissivity of those of the controllable elements which correspond to the defective light-emitting element.
36. (Currently Amended) The display of claim ~~[[3]]~~ 25 wherein the light-emitting elements are arranged in a regular array.
37. (Currently Amended) The display of claim ~~[[36]]~~ 39 wherein the array is a rectangular array.
38. (Currently Amended) The display of claim ~~[[36]]~~ 39 wherein the array is a hexagonal array.

39. (Currently Amended) ~~The display of claim 36 comprising~~ A display comprising:  
a light source comprising a two-dimensional array of light-emitting elements each  
having a controllable light output;  
a spatial light modulator comprising a plurality of controllable elements located to  
modulate light from the light source;  
wherein:  
the spatial light modulator has more controllable elements than the light source  
has light-emitting elements;  
each of the light-emitting elements of the light source is located to illuminate a  
plurality of corresponding controllable elements of the spatial light modulator;  
the light-emitting elements are arranged in a regular array; and,  
the display comprises light barriers disposed between adjacent ones of the light-emitting elements.
40. (Currently Amended) A display according to claim ~~[[3]]~~ 25 comprising a control circuit for individually varying the controllable light outputs of the light-emitting elements by varying duty cycles of the light-emitting elements.
41. (Currently Amended) A display according to claim ~~[[3]]~~ 25 comprising a control circuit for individually varying the controllable light outputs of the light-emitting elements by varying electrical driving currents delivered to the light-emitting elements.
42. (Original) A display according to claim 33 wherein the light detector is coupled to receive the stray light by a planar waveguide.
43. (Original) A display according to claim 42 wherein the light-emitting elements are received in apertures of the planar waveguide and the waveguide captures light emitted by the light-emitting elements in a sideways direction.
44. (Original) A display according to claim 43 wherein the planar waveguide is located behind the light-emitting elements.
45. (Previously Presented) A display according to claim 31 comprising a planar waveguide located in front of the light-emitting elements and a light sensor coupled to the planar waveguide to detect light emitted by the light-emitting elements.

46. (Original) A display according to claim 45 wherein one surface of the planar waveguide is roughened sufficiently to direct a fraction of light emitted by the light-emitting elements into the planar waveguide.
- 47-56. (Cancelled)
57. (New) A display according to claim 7 wherein the light-emitting elements comprise light emitting diodes which emit white light.
58. (New) A display according to claim 12 wherein the light-emitting elements comprise light emitting diodes which emit white light.
59. (New) A display according to claim 13 wherein the light-emitting elements comprise light emitting diodes which emit white light.
60. (New) A display according to claim 14 wherein the light-emitting elements comprise light emitting diodes which emit white light.
61. (New) A display according to claim 39 wherein the light-emitting elements comprise light emitting diodes which emit white light.